KEMENTERIAN PENDIDIKAN TINGGI
JABATAN PENDIDIKAN POLITEKNIK DAN KOLEJ KOMUNITI

POLITEKNIK MALAYSIA
MERLIMAU

PROGRAMME HANDBOOK

MECHANICAL ENGINEERING DEPARTMENT

DIPLOMA IN MECHANICAL ENGINEERING (MANUFACTURING)

(DTP)

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06 - 263 6678

Seventh Edition

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Preface

Bismillahirrahmanirrahim

Assalamulaikum w.b.t and Salam Sejahtera.

Dear Students,

First and foremost, I would like to welcome you to our beloved Politeknik Merlimau (PMM). As you can see, the atmosphere and the ambience here are very conducive for teaching and learning.

As we are aware, the industry requires graduates who are knowledgeable and have impeccable track records and self-discipline. We in PMM have taken measures to ensure all these requirements are met.

Furthermore, in order to add value to our graduates, we greatly emphasize our students to be involved in co-curricular activities, especially the uniformed bodies.

I believe that with the quality courses offered by the Civil, Electrical and Mechanical Engineering Departments as well as Commerce and Tourism and Hospitality, we would be able to produce high quality of towering personality graduates who would contribute to the development of our nation.

I am looking forward to meeting you and I hope that you would take advantage of all the facilities provided in order for you to attain the best knowledge and become the contributing citizen for our beloved Malaysia.

Thank you.

Sincerely,

Norizam bin Sekak

Director

Politeknik Merlimau

Preface

Assalamualaikum w.b.t and Salam Sejahtera.

I am happy to note that we are able to come up with this Programme Handbook to facilitate students with the information on our Politeknik Merlimau and Mechanical Engineering Department. Our is dynamic and ever-evolving that offers students the opportunity to become excellent. Using innovative teaching methodologies and technology integration, the department sets its standard for student success both in the classroom and in the workplace. The department, staff and administration welcome you to our family. This Programme Handbook will be the initial window to the information on the engineering programmes being offered by this department.

The programmes offered are Diploma in Mechanical Engineering or DKM, Diploma in Mechanical Engineering (Manufacturing) or DTP and Diploma in Mechatronic Engineering or DEM. Those programmes cater to four categories of courses or subjects. It means that students have to complete all the courses listed for their programmes in order to graduate. The four categories of courses are the core, elective, compulsory and common courses.

Having had their life in PMM, the students are exposed to various kinds of activities whether the activities are academic-based or non-academic-based. Amongst those activities are Innovation, Pre-graduation Night, Industrial Attachment, Head of Department Award/List, Collaboration and Community Service. The activities organized gear the students to develop themselves into a more competitive and resourceful people that would lead to the creation of towering personality graduates.

This department provides a vast range of facilities which are like Fitting and Machining Workshop, Welding Workshop, Foundry Workshop, Plant Laboratory, Strength of Materials Laboratory, CADCAM Laboratory, Metrology Laboratory, Instrumentation and Control Laboratory, M-CAD 1 Laboratories, Metallurgy Laboratory, Mechanics of Machines Laboratory, lecture room, Lecture Hall and Drawing Room.

To conclude, I would like to express my highest appreciation and gratitude to all who have contributed to the programme handbook for the Mechanical Engineering Department. May I wish and sincerely hope that this initiative will be of immense help for the students. Thank you.

Mohamad Najib bin Mohamad Zain
The Head of Mechanical Engineering Department
Politeknik Merlimau

Introduction

Politeknik Merlimau (PMM) is the 14th polytechnic of the Department of Polytechnic Education Ministry of Higher Education. PMM is located in Merlimau, 26 kilometers south of the state capital city, the Historical City of Melaka.

Established in 2002, PMM started in Politeknik Melaka (formerly known as Politeknik Kota Melaka). Moving to its own Merlimau campus in the end of 2002, Politeknik Merlimau since then has risen to the forefront of achievements in various fields, emerging as the catalyst polytechnic in academic, innovation as well as social responsibilities activities.

The PMM campus is spread across an area of 100 acres, which houses seven academic departments, two non-academic departments and twelve supporting service units. Those academic departments consist of five main departments and two ancillary departments. The main departments are the Department of Civil Engineering, Department of Electrical Engineering, Department of Mechanical Engineering, Department of Commerce and Department of Hospitality and Tourism. The ancillary departments, on the other hand, are the Department of Mathematics, Science & Computer and Department of General Studies.

PMM believes that learning environments play a critical role in the development of strong learning communities, which is one of the key aims of curriculum evolution at PMM. These communities are supported by the institution, technology and cohort-targeted diploma graduate students. Thus, PMM provides a wide range of facilities and spaces that can be utilized by both the staffs and students, such as the CIDOS e-learning tools that serves as the Learning Management System. It is developed for the purpose of continuous improvement of the teaching and learning processes .

PMM provides a broad-based curriculum that is underscored by the multi-disciplinary courses that are coupled together with the ancillary department's courses that are aligned with the transformative pillars of the Department of Polytechnic Education, Ministry of Higher Education. The classroom lessons and activities are based on sound principles of pedagogy and practice, where lectures are given in English. These measures are in place for the nurturing of well-rounded graduates that are characterized by innovative thinking and relevant skills to thrive in a knowledge economy.

All in all, PMM provides students with an ideal, supportive and innovative environment in which students can find their future direction while making full use of their valuable time. This is further enhanced with the practicality, entrepreneurship, and the pursuit of academic and management excellence aspects in PMM. It is hoped that the well-rounded graduates enveloped with outstanding leadership qualities will enable them to make valuable contributions for the betterment of the society and country as a whole.

Vision & Mission

To be the Leading-Edge
TVET Instituition

VISION

To develop holistic, entrepreneurial and balanced TVET graduates through dynamic education in-line with the current Industrial Revolution

1

To capitalise on smart partnership with stakeholders

2

MISSION

To empower communities through life-long learning

3

TAG LINE

Expertise for
Excellence, X4X

Management Organisational Chart

Outcome Based Education (OBE)

The Ministry of Higher Education, Malaysian Qualification Agency (MQA) and related professional bodies require all programs offered by Institutions of Higher Learning to adopt the Outcome Based Educatio (OBE) approach in their teaching and learning activities. This is in line with the paradigm shift mooted by the Ministry of Higher Education to enhance the quality of education in Malaysia.

Outcome-based education (OBE) is an educational approach that focuses on what students are able to do upon completion of a course. All curriculum and teaching decisions are made based on how best to facilitate the desired outcome. The term outcomes in this matter would be a set of values or 'wish list' on what the students should acquire upon completion of their educational program. Outcome-based education is designed so that "all students are equipped with the knowledge, skills and qualities needed to be successful after they exit the educational system" (Spady, 1994, p. 9).

In brief, OBE answers the following questions:

- What must the student learn?
- What do the teachers or lecturers want the student to learn?
- How does what the student learn affect the overall educational outcome?
- How do the teachers or lecturers make sure that the students learn what they are intended to learn?

Thus, OBE outlines the guidance for planning, delivering and evaluating teaching and learning activities to achieve the results expressed in terms of individual student learning outcomes as shown in Figure 5.1 below.

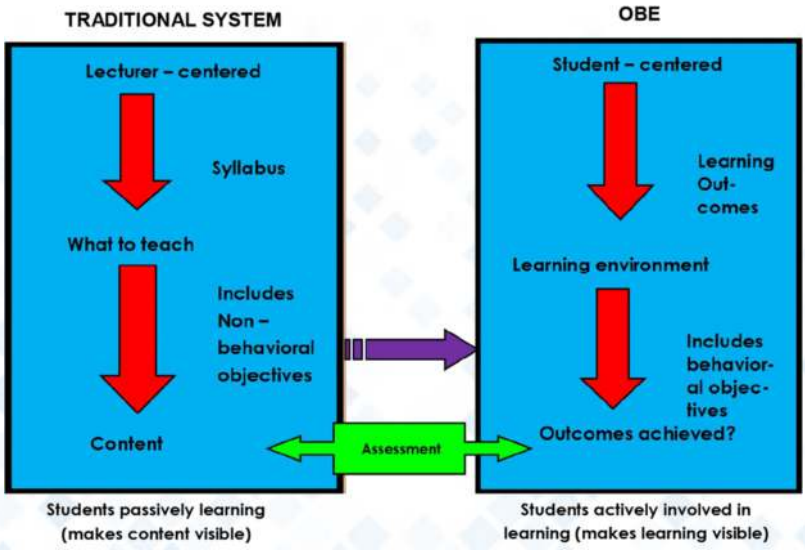
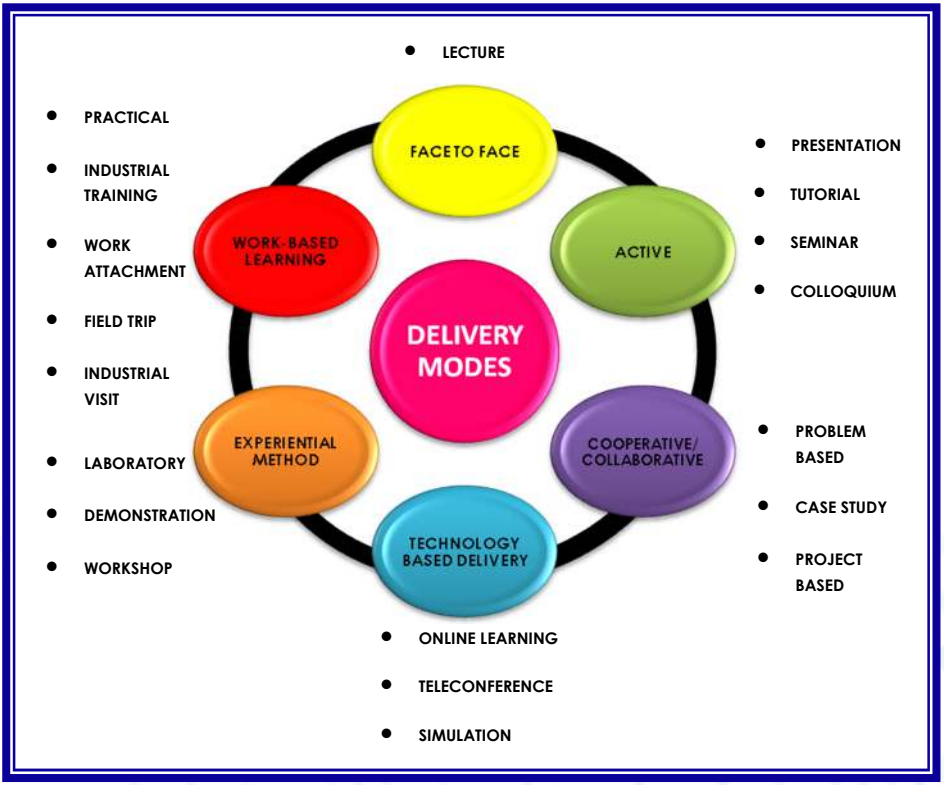


Figure 5.1: A Paradigm Shift for Educational System

Outcome Based Education (OBE)

DELIVERY MODES

The diversity of teaching and learning methodologies can be adapted by lecturers as to cater to the hetrogeneous or different students' potentials. This is important to ensure that different students are at the maximum level while the less potential ones are not left behind. Figure 5.2 shows that there are many modes of delivery that can be employed to suit various teaching and learning purposes.



Outcome Based Education (OBE)

OBE EDUCATIONAL FRAMEWORK

Programme Educational Objectives (PEO):

The broad statements that describe the career and professional accomplishments which the program is preparing graduates to achieve.

Programme Learning Outcomes (PLO):

The statements that describe what students are expected to know and able to perform or attain in terms of skills, knowledge and behaviour or attitude by the time of graduation.

Course Learning Outcomes (CLO):

The statements that describe the specification of what a student should learn upon completing a course .

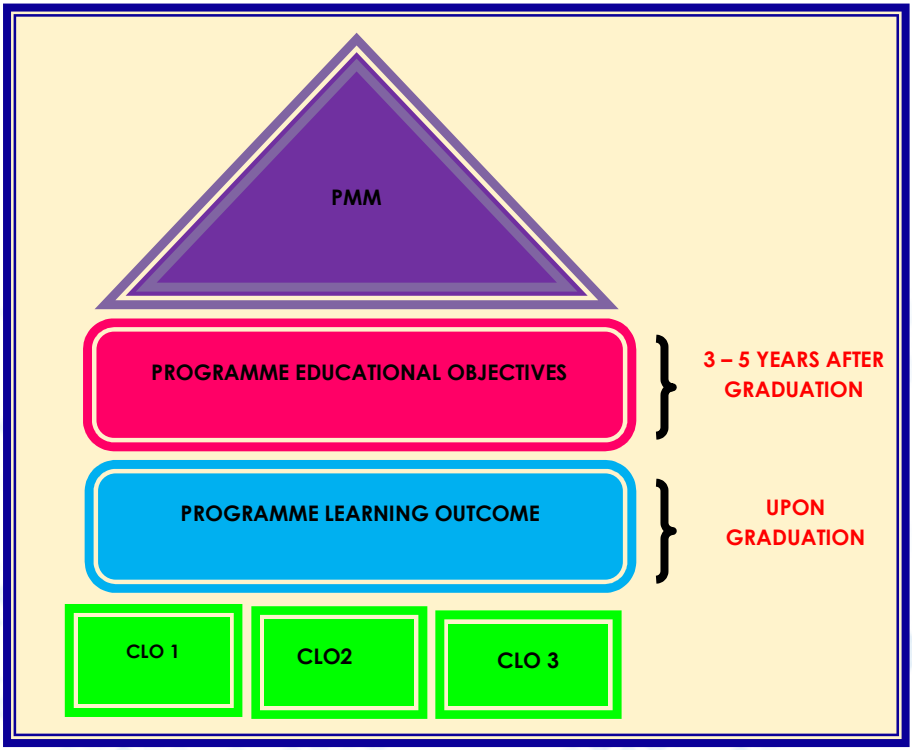


Figure 5.3 : OBE Educational Framework

Outcome Based Education (OBE)

FORMATION OF LEARNING OUTCOMES

The achievement of students is measured by learning outcomes. These learning outcomes should specify the competencies acquired by students upon completion of their studies. The Learning outcome consist of 8 domains that have been clustered into 5 clusters. The diagram Malaysian Qualifications Framework 2nd Edition: Level Descriptors below shows the cluster ;

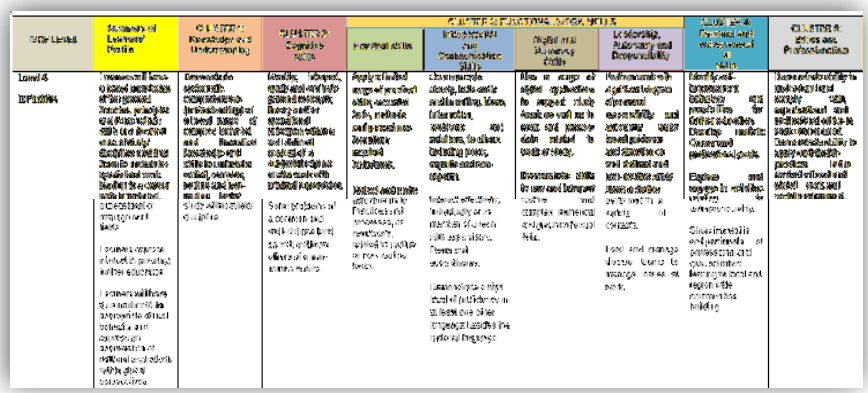


Figure 5.4 :Competency Domain to be applied in MQA Outcomes

(Learning Outcomes, LO)

Outcome Based Education (OBE)

THREE MAIN STAGES IN TEACHING AND LEARNING PROCESS

In general, OBE concept divides teaching and learning activities into three parts, namely:

i. Planning,
ii. Implementation and
iii. Assessment

At the planning stage, learning outcomes should be determined in advance by taking into account what students can do after attending a teaching process.

At the implementation stage, the teaching and learning activities should be designed to achieve the specified learning outcomes.

Finally, the assessment is to be determined where it measures how far students have achieved the specified learning outcomes and assessment provides input to continuously improve the teaching and learning process.

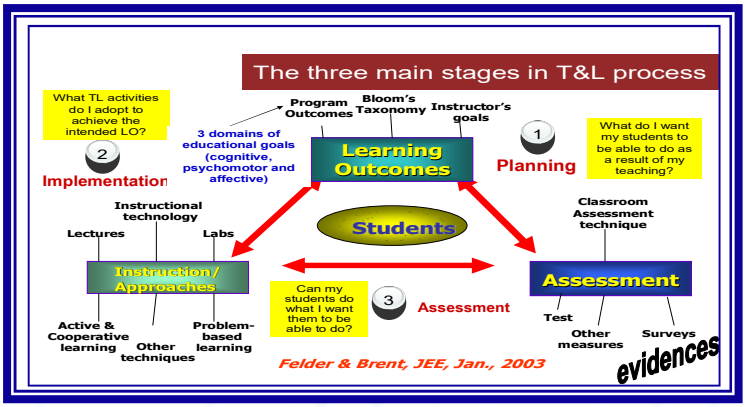


Figure 5.5 : Three Main Stage in Learning and Teaching Process

Towards the future of OBE:

1. Courses will help students to want, passionately, to do things, rather than just 'be able to' do things.
2. Assessment will assess whether students actually and spontaneously achieve the outcomes, rather than just 'being able to'
3. Outcomes will include values and principles and purposes as well as abilities.

In conclusion, the call for accountability is inevitably one of the reasons that lead to the introduction of OBE in Politeknik Merlimau. All parties need to make necessary changes, modifications, and improvements in the light of the changes aimed. The roles of curriculum, lecturers or instructors and assessment must gear the students towards the intended outcomes.

E-Learning Unit

Introduction

CeLT (Center for e-Learning & Teaching) is a special name for Digital Learning Unit under the Instructional and Digital Learning Division, Polytechnic Education Department, Ministry of Higher Education Malaysia. CeLT is created to help empower the special National e-Learning agenda for all Malaysian Polytechnic.

VISION

Transforming Politeknik Merlimau towards global competitiveness through e-learning.

MISSION

Build a competitive, creative and sustainable e-learning framework.

OBJECTIVE

1. Encourage quality, fair and equitable education opportunities through e-learning (open, neutral and active)
2. Provide appropriate infrastructure and e-learning friendly
3. Creating a variety of creativity to strengthen the 21st century learning and teaching process
4. Improve staffs and students skills through e-learning in the 21st century

The roles and responsibilities of the e-Learning Unit are:

1. Coordinating, supporting and monitoring the implementation of e-Learning through the CIDOS platform.
2. Developing and improving CIDOS functionality to meet the effective R&D requirements and suiting the rapid development of ICT (including Mobile-ready).
3. Improving literacy and training and mentoring on e-Learning.
4. Planning of training and mentoring and supporting e-Content development for academic staffs and students.
5. Designing strategies and coordinating the EDOLA competition organized by CELT's Department of Polytechnic Education such as TVET Tunes, Poli TV, EMCC, VR 360 and Augmented Reality (AR).

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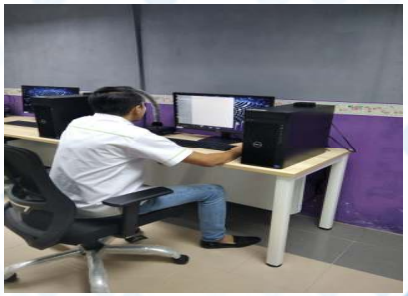
E-Learning Unit

Facilities



Mechanical Engineering Department

Introduction

The Mechanical Engineering Department offers (3) diploma programmes in fulfilling the nation's industrial needs. The programmes offered are Diploma in Mechanical Engineering (DKM), Diploma in Mechanical Engineering (Manufacturing) (DTP), and finally Diploma in Mechatronics Engineering (DEM).

The programmes offered are in compliance with the four course or subject categories. This implies that the students need to complete all the listed courses that are required by the programme to be passed. The four course categories are core, elective, compulsory and general. While the students are spending their time studying in PMM, they are also being exposed to a multitude of activities, whether it's academic or non academic. Among the activities to be participated are Innovation, Pre Graduation Night, Industrial Training, Head of Department's Award, Collaboration and Community Service. These activities will enable the students to showcase their hidden, latent abilities so that they are able to be more competitive and knowledgeable, which in turn will make them a highly sought after graduates with renowned stature.

PROGRAMME	DURATION	ACREDITATION NUMBER
Diploma in Mechanical Engineering (DKM)	**3 Years (6 Semester)**	BEM/ETAD/02/87/ DA/02-00-118(001)
Diploma in Mechanical Engineering (Manufacturing) (DTP)	**3 Years (6 Semester)**	MQA/FA3084
Diploma in Mechatronics Engineering (DEM).	**3 Years (6 Semester)**	MQA/FA3085

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Mechanical Engineering Department

Facilities

Machine Workshop

Fitting Workshop

Welding Workshop

Foundry Workshop

Plant Lab.

Pneumatic & Hydraulic Lab.

Thermodynamic Lab.

CADCAM Lab.

Mechanical Engineering Department

Metrology Lab.

Instrumentation & Control Lab

M-CAD Lab. 1

Plastic Workshop

Metallurgy Lab.

Robotic Lab.

Mechanical Engineering Department

Fluid Lab.

Lecture Room

Lecture Hall

Technical Drawing Room

Discussion Area

Seminar Room

Diploma in Mechanical Engineering (Manufacturing)

PROGRAMME OVERVIEW

Introduction

In line with the 3rd Industrial Malaysia Plan (IMP3) aiming for the innovative and creative human capital development, via matching talent to expertise with market demand, Diploma in Mechanical Engineering (Manufacturing) for polytechnic is developed to give balance emphasis on theoretical and practical aspects. The Eleventh Malaysia Plan was drawn to produced 60% out of 1.5 million workers was in TVET sector. Until now a total of 69,475 (51%) of the 136,062 technical education and vocational training (TVET) graduates in Malaysia are working as professionals and skilled workers. Thus, to keep abreast with rapid demand in TVET sector, Department of Polytechnic and Community College Education (DPCCE) progressively collaborates with major industry players in the country in developing the curriculum. The programme will take six semesters to complete, five academic semesters at their respective polytechnics and one semester of industrial training at relevant industries during the final semester. This programme complies with the Board of Engineer (BEM) requirement.

Synopsis

The Diploma in Mechanical Engineering (Manufacturing) programme is designed to produce holistic graduates that have knowledge and competent skills in the field of mechanical engineering to fulfil the demand of workers in engineering sector. The programme structure focusses on the area of Solid Mechanics, Statics & Dynamics, Thermodynamics & Heat Transfer, Fluid Mechanics, Materials, Mechanical Design, Electrical, Manufacturing, Instrumentation & Control and Mechanical Maintenance possess the interpersonal and communication skills needed to thrive in the industry, teamwork and leadership roles, group discussions, seminars and presentations are embedded in the course delivery and assessments.

Job Prospects

This programme provides the knowledge and skills in Manufacturing field that can be applied to a broad range of careers in Mechanical Engineering. The knowledge and skills that the students acquire from the programme will enable them to participate in the job market as:

a. Assistant Engineer
b. Production/ Process Supervisor
c. Technical Assistant
d. Technician
e. Product Designer
f. Quality Officer
g. CNC Programmer Technical Assistant
h. Precision Machinist
i. Production / Process Executive
j. Procurement Executive
k. Technical Specialist
l. Technical Instructor or Lecturer

Diploma in Mechanical Engineering (Manufacturing)

Vision

To be the Leading-Edge TVET Institution

Mission

a. To provide wide access to quality and recognized TVET programmes
b. To empower communities through lifelong learning
c. To develop holistic, entrepreneurial and balanced graduates
d. To capitalise on smart partnership with stakeholders

Educational Goal

To produce holistic and competent TVET graduates capable of contributing to the nation development.

Programme Aims

The programme believes that every individual has potential and the programme aims to develop adaptable and responsible Senior Assistant Mechanical Engineers to support government's aspiration to increase workforce in engineering related field.

Programme Educational Objectives (PEO)

The Diploma in Mechanical Engineering (Manufacturing) programme should produce Assistant Mechanical Engineers who are:

PEO1: equipped with industry-relevant knowledge and skills in Mechanical Engineering field.

PEO2: engaging on lifelong and continuous learning to enhance knowledge and skills.

PEO3: instilled with entrepreneurial skills and mind set in the real working environment.

PEO4: established with strong linkage with society and players in the industry.

Diploma in Mechanical Engineering (Manufacturing)

Programme Learning Outcomes (PLO)

PLO01 : apply knowledge of applied mathematics, applied science, engineering fundamentals and an engineering specialization as specified in DK1 to DK4 respectively for practical procedures and practices

PLO02 : identify and analyze well-defined engineering problems reaching substantiated conclusions using codified methods of analysis specific to their field of activity (DK1 to DK4)

PLO03 : design solutions for well-defined technical problems and assist with the design of systems, components or processes to meet specified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations (DK5)

PLO04 : conduct investigations of well-defined problems; locate and search relevant codes and catalogues, conduct standard tests and measurements

PLO05 : apply appropriate techniques, resources, and modern engineering and IT tools to well-defined engineering problems, with an awareness of the limitations (DK6)

PLO06 : demonstrate knowledge of the societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to engineering technician practice and solutions to well-defined engineering problems (DK7)

PLO07 : understand and evaluate the sustainability and impact of engineering technician work in the solution of well-defined engineering problems in societal and environmental contexts (DK7)

PLO08 : understand and commit to professional ethics and responsibilities and norms of technician practice

PLO09 : function effectively as an individual, and as a member in diverse technical teams

PLO10 : communicate effectively on well-defined engineering activities with the engineering community and with society at large, by being able to comprehend the work of others, document their own work, and give and receive clear instructions

PLO11 : demonstrate knowledge and understanding of engineering management principles and apply these to one's own work, as a member or leader in a technical team and to manage projects in multidisciplinary environments

PLO12 : recognize the need for, and have the ability to engage in independent updating in the context of specialized technical knowledge.

Diploma in Mechanical Engineering (Manufacturing)

Programme Structure

COURSE SEMESTER 1							
CLASSIFICATION	COURSE CODE	COURSE	Contact Hour				Credit Values
			L	P	T	O	
Compulsory	DUE10012	Communicative English 1	1	0	2	0	2
	MPU24XX1	Sukan	0	2	0	0	1
		Unit Beruniform 1	0	2	0	0	1
Common Core	DUW10022	Occupational Safety And Health For Engineering	2	0	0	0	2
	DRS10012	Engineering Science	2	1	0	0	2
	DBM10013	Engineering Mathematics 1	2	0	2	0	3
Displine Core	DJJ10013	Engineering Drawing	1	3	0	0	3
	DJJ10022	Mechanical Workshop Practice 1	0	4	0	0	2
	DJJ10033	Workshop Technology	3	0	0	0	3
COURSE SEMESTER 2							
CLASSIFICATION	COURSE CODE	COURSE	Contact Hour				Credit Values
			L	P	T	O	
Compulsory	MPU23052	Sains, Teknologi dan Kejuruteraan Dalam Islam* (Muslim)	1	0	2	0	2
	MPU23042	Nilai Masyarakat Malaysia** (Non Muslim)	1	0	2	0	2
	MPU24XX1	Kelab/Persatuan	0	2	0	0	1
		Unit Beruniform 2	0	2	0	0	1
Common Core	DBM20023	Engineering Mathematics 2	2	0	2	0	3
Displine Core	DJJ20053	Electrical Technology	2	2	0	0	3
	DJJ20063	Thermodynamics	2	2	0	0	3
	DJJ20073	Fluid Mechanics	2	2	0	0	3
Specialization	DJF21012	Manufacturing Workshop Practices 1	0	4	0	0	2

Diploma in Mechanical Engineering (Manufacturing)

COURSE SEMESTER 3							
CLASSIFICATION	COURSE CODE	COURSE	Contact Hour				Credit Values
			L	P	T	O	
Compulsory	DUE30022	Communicative English 2	1	0	2	0	2
	MPU21032	Penghayatan Etika Dan Peradaban	1	0	2	0	2
Common Core	DBM30033	Engineering Mathematics 3	2	0	2	0	3
Discipline Core	DJJ30113	Material Science and Engineering	2	2	0	0	3
	DJJ30093	Engineering Mechanics	2	2	0	0	3
	DJJ30122	Computer Aided Design	1	2	0	0	2
Specialization	DJF31022	Manufacturing Workshop Practices 2	0	4	0	0	2
COURSE SEMESTER 4							
CLASSIFICATION	COURSE CODE	COURSE	Contact Hour				Credit Values
			L	P	T	O	
Common Core	DJJ40132	Engineering Society	2	0	0	0	2
Discipline Core	DJJ40153	Pneumatic & Hydraulic	2	2	0	0	3
	DJJ30103	Strength Of Materials	2	2	0	0	3
	DJJ40182	Project 1	2	0	0	0	2
Specialization	DJF41032	Manufacturing Workshop Practices 3	0	4	0	0	2
	DJF41042	CAD/CAM	0	4	0	0	2
	DJF41052	Manufacturing System	2	0	0	0	2
Elective							
Elective	DJF42012	Advanced Manufacturing Process	2	0	0	0	2
COURSE SEMESTER 5							
CLASSIFICATION	COURSE CODE	COURSE	Contact Hour				Credit Values
			L	P	T	O	
Compulsory	DUE50032	Communicative English 3	1	0	2	0	2
	MPU22012	Entrepreneurship	1	0	2	0	2
Discipline Core	DJJ50193	Project 2	0	4	0	0	3
Specialization	DJF51062	Manufacturing Control	2	0	0	0	2
	DJF51072	Jig And Fixture Design	1	2	0	0	2
	DJF51082	Quality Control	2	0	0	0	2
	DJF51092	Tool Design	1	2	0	0	2
COURSE SEMESTER 6							
CLASSIFICATION	COURSE CODE	COURSE	Contact Hour				Credit Values
			L	P	T	O	
Industrial	DUT600610	Industrial Training	0	0	0	0	10

Synopsis & Course Learning Outcomes (CLO)

SEMESTER	COURSE	CREDIT	SYNOPSIS	CLO
1	DUW10022 OCCUPATIONAL SAFETY AND HEALTH FOR ENGINEERING	2	**OCCUPATIONAL SAFETY AND HEALTH FOR ENGINEERING** course is designed to impart understanding of the self-regulatory concepts and provisions under the Occupational Safety & Health Act (OSHA). This course Presents the responsibilities of workers in implementing and complying with the safety procedures at work. Understanding of notifications of accidents, dangerous occurrence, poisoning and diseases and liability for offences will be imparted upon students. This course will also provide an understanding of the key issues in OSH Management, Incident Prevention, Fire Safety, Hazard Identification Risk Control and Risk Assessment (HIRARC), Workplace Environment and Ergonomics and guide the students gradually into this multi-disciplinary science.	Upon completion of this course, students should be able to: 1. Explain briefly Occupational Safety and Health (OSH) procedures, regulation and its compliance in Malaysia. (C2, PLO1) 2. Initiates incident hazards, risks and safe work practices in order to maintain health and safe work environment (A3, PLO8) 3. Demonstrate communication skill in group to explain the factor that can lead to accident in workplace. (A3, PLO10)
	DJJ 10013 ENGINEERING DRAWING	2	**ENGINEERING DRAWING** course provides the students with the fundamentals of technical drawings and the application Computer Aided Design (CAD) software. For technical drawing, it emphasizes on the practical knowledge of drawing instruments and drawing techniques while for CAD the student will learn to navigate and use the software to create 2D drawing design in engineering. Students shall be able to demonstrate competency in using some standard available features of technical drawing and CAD application to create and manipulate objects or elements in engineering drawing.	Upon completion of this course, students should be able to: 1. Apply the fundamentals of technical drawing and features of CAD software in producing engineering drawing. (C3, PLO1) 2. Construct the technical drawing and 2D CAD drawing according to the engineering drawing standards. (P3, PLO5) 3. Propose a project report with following engineering norms and practices in engineering drawing. (A3, PLO8)

Synopsis & Course Learning Outcomes (CLO)

SEMESTER	COURSE	CREDIT	SYNOPSIS	CLO
1	DJJ 10022 MECHANICAL WORKSHOP PRACTICE 1	2	**MECHANICAL WORKSHOP PRACTICE 1** exposes the students to welding, machining and fitting which involve the use of arc and gas welding machine, lathe machine, drilling machine, grinding, hand tools, marking out tools, measuring and testing tools. Students are also taught to emphasize on safety procedures and cleanliness in the workshop	Upon completion of this course, student should be able to: 1. Measure finished product using appropriate measurement instruments. (P3, PLO5) 2. Perform fitting, welding and machining works according to Standard Operational Procedure (SOP). (P4, PLO5) 3. Demonstrate an understanding of professional ethics, responsibilities and norms of engineering practices according to the workshop safety regulation. (A3, PLO6)
	DJJ 10033 WORKSHOP TECHNOLOGY	2	**WORKSHOP TECHNOLOGY** provides exposure and knowledge in using hand tools, machine operation such as drilling, lathe, milling and computer numerical control. It also covers on gear measurement and Inspection welding process in oxy acetylene, Shielded Metal Arc Welding (SMAW), Gas Tungsten Arc Welding (GTAW) and Gas Metal Arc Welding (GMAW).	Upon completion of this course, student should be able to: 1. Apply the knowledge of basic mechanical components and equipment, hand tools and measuring equipment in workshop technology. (C3, PLO1) 2. Apply standard practice in operating mechanical tools and component. (C3, PLO8) 3. Demonstrate continuous Learning and information management skills to complete assigned task. (A3, PLO12)

Synopsis & Course Learning Outcomes (CLO)

SEMESTER	COURSE	CREDIT	SYNOPSIS	CLO
2	DJJ20053 ELECTRICAL TECHNOLOGY	2	**ELECTRICAL TECHNOLOGY** exposes students to the basic electrical circuit concepts, the application of electro-magnetism in electrical machines and transformers. The course focuses on the different types of electrical circuits, the relationship between current and voltage including the resistance. It also provides the skills on the methods of constructing basic circuits and operation of electrical machines and transformers. This course also exposes the students to the demonstration of experiments in Electrical Engineering	Upon completion of this course, students should be able to: 1. Explain the principles and fundamental of electrical circuits, electromagnetism, transformers and electrical machine. (C2, PLO1) 2. Solve the problem related to electrical circuits, electromag-netism, transformers and electrical machine. (C3, PLO1) 3. Organize appropriately experi-ments in groups according to the Standard Operating Procedures. (P4, PLO5)
	DJJ 20063 THERMODYNAMICS	3	**THERMODYNAMICS** provides knowledge of theory, concept and application of principles to solve problems related to thermodynamics. It emphasizes on concept of non-flow process and flow process, properties of steam, Carnot cycle and Rankine cycle. This course also exposes the students to the demonstration of experiments in Thermodynamics by using the real equipment.	Upon completion of this course students should be able to:- 1. Explain fundamentals concept and properties of pure substances in thermodynamics. (C2, PLO1) 2. Apply Laws of thermodynamics and it processes. (C3, PLO1) 3. Organize appropriately experiments according to the Standard Operating Procedures. (P4, PLO5)

Synopsis & Course Learning Outcomes (CLO)

SEMESTER	COURSE	CREDIT	SYNOPSIS	CLO
2	DJJ 20073 FLUID MECHQNICS	2	**FLUID MECHANICS** provides students with a strong understanding of the fundamentals of fluid mechanics principles related to the fluid properties and behavior in static and dynamic situations. This course also exposes the students to the demonstration at the real equipment of fluid mechanics.	Upon completion of this course students should be able to: 1. Explain the fundamentals of fluid (C2, PLO1) 2. Solve problems related to fluid properties, fluid statics and fluid dynamics (C3, PLO1) 3. Organize appropriate experiments in groups according to the standard operating procedures (P4, PLO5)
	DJF 21012 MANUFACTURING WORKSHOP PRACTICE 1	2	**MANUFACTURING WORKSHOP PRACTICE 1** exposes the students to the fundamental of manufacturing processes, industrial environment, cultural issues and hands on experiences. This course enables students to apply knowledge and develop required technical skills on sand casting, conventional machining and TIG/MIG welding. The workshop practice helps the students to practice appropriate safety procedures and standard operation on completing mini project and practical task. The practical skills also cover the organizational and housekeeping activity, schedule maintenance, planning skills, supervising design, inspecting and testing welding task in order to meet the quality requirement.	Upon completion of this course students will be able to: 1. Build a project using casting, TIG and MIG welding process based on standard operational procedures and safety. (P3, PLO5) 2. Perform direct indexing operation using indexing head attachment in milling machine processes. (P4, PLO5) 3. Demonstrate an understanding of the responsibilities, societal, health, safety, legal and cultural issues during practical work session. (A3, PLO6)

Synopsis & Course Learning Outcomes (CLO)

SEMESTER	COURSE	CREDIT	SYNOPSIS	CLO
3	DJJ 30122 COMPUTER AIDED DESIGN	2	**COMPUTER AIDED DESIGN** exposes the students to the fundamentals and principles of 3D drawing using 3D CAD software. Students also equip with various method of creating a solid model using extrude, revolve, swept, assembly, simulation and animation. Hands-on exercises drawing of mechanical engineering will also be covered in this course	Upon completing this course students should be able to: 1. Apply CAD commands in order to produce engineering (C1, PLO1) 2. Construct 3D drawing of Mechanical Components according Drawing Standards (P4,PLO5) 3. Demonstrate a presentation with following technical standard Communication (A3, PLO10)
	DJF 31022 MANUFACTURING WORKSHOP PRACTICE 2	3	**MANUFACTURING WORKSHOP PRACTICE 2** exposes the students to the fundamental of manufacturing processes, industrial environment, cultural issues and hands-on experiences. This course enables students to apply knowledge and develop required technical skills on CNC machine, conventional machining, surface grinding machine and TIG/MIG welding. The workshop practice helps the students to practice appropriate safety procedures and standard operation on completing mini project and practical task. The practical skills also cover the organizational and housekeeping activity, schedule maintenance, planning skills, supervising design, inspecting and testing welding task in order to meet the quality requirements.	Upon completion of this course, students should be able to: 1. Build a project using CNC machine, TIG and MIG welding process based on standard operational procedures and safety. (P3,PLO5) 2. Perform contouring cutting operation using rotary table attachment in milling machine processes. (P5,PL05) 3. Demonstrate an understanding of the responsibilities, societal, health, safety, legal and cultural issues during practical work session. (A3,PLO6)

Synopsis & Course Learning Outcomes (CLO)

SEMESTER	COURSE	CREDIT	SYNOPSIS	CLO
3	DJJ 30113 MATERIAL SCIENCE AND ENGINEERING	2	**MATERIALS SCIENCE AND ENGINEERING** course introduces students a comprehensive coverage of basic fundamentals of materials science and engineering. The course focuses on material structures, properties, fabrication methods, corrosion, thermal processing and material testing mostly of metals and alloys. New fabrication method of powder metallurgy are introduces to student to cater the fabrications of devices, sensors for Industry 4.0 technology.	Upon completion of this course, students should be able to: 1. Apply the fundamental of material science to identify the materials, properties, behavior, processes and treatment. (C3,PLO1) 2. Performed appropriate material testing according to the Standard Operating Procedures (P4,PLO5) 3. Demonstrate the ability to work individually and in groups to complete assigned tasks during the practical work session. (A3, PLO9)
	DJJ 30093 ENGINEERING MECHANICS	2	**ENGINEERING MECHANICS** focuses on theoretical knowledge in statics and dynamics. This course provides students with fundamental understanding of forces and equilibrium, resultants, equilibrium of a particles and structural analysis. This course also covers kinematics and kinetics of particles. This course also exposes the students to the demonstration of experiments in Engineering Mechanics.	Upon completion of this course, students should be able to:- 1. Solve problems related to static and dynamics based on the concepts and principle of engineering mechanics (C3,PLO1) 2. Analyze engineering related problems based on fundamentals of static and dynamics (C4, PLO2) 3. Organize appropriately experiment in groups according to Standard Operation Procedures (P4, PLO5)

Synopsis & Course Learning Outcomes (CLO)

SEMESTER	COURSE	CREDIT	SYNOPSIS	CLO
4	DJF41032 MANUFACTURING WORKSHOP PRACTICE 3	2	**MANUFACTURING WORKSHOP PRACTICE 3** exposes the students to develop knowledge and skills in Robot Programming and Application, Programmable Logic Control, Additive Manufacturing and Plastic Processing. Robot Application helps the students to learn about programming, hands-on training and robot application. Students will also learn about creating a simple program using PLC which is widely used in manufacturing and mechanical processes. The Additive Manufacturing will focus on designing complex design shapes which involves in modifying and completing design of a prototype. Plastic processing process helps the students to understand the basic principle of the plastic manufacturing processes.	Upon completion of this course, students should be able to:- 1. Manipulates robot programming and PLC programming process. (P3, PLO5) 2. Perform mini project using additive manufacturing and plastic processing process (P4, PLO5) 3. Demonstrate an understanding of professional ethics, responsibilities, norms and practices during practical work session. (A3, PLO 8)
	DJJ 41041 CAD/CAM	2	**CAD/CAM** explains the theory and basic of coding languages, structures and the use of CAD/CAM systems for generating and verifying tool path. The students will be use CAD/CAM software to demonstrate the integration between CAD and CAM operation that includes design an object, produce a code and simulate the tool path for machining operation prior to the machining process and also generate NC part programming. Students also enables to build a project from NC part programming using CNC milling or lathe machine.	Upon completion of this course, the students should be able to: 1. Calibrates machining code (G and M code) from CAD/CAM software to plan and devise holes process and milling/lathe project.(P3, PLO3) 2. Build a project using CNC milling or lathe machine by utilizing related CAD/CAM simulation software. (P4,PLO5) 3. Demonstrate continuous learning and information management skill while engaging in independent acquisition of new knowledge and skill to develop a project. (A3,PLO12)

Synopsis & Course Learning Outcomes (CLO)

SEMESTER	COURSE	CREDIT	SYNOPSIS	CLO
4	DJF41052 MANUFACTURING SYSTEM	2	**MANUFACTURING SYSTEM** explains the terminologies and concepts that are necessary in the learning of manufacturing system. It provides knowledge regarding fundamental of manufacturing system, industrial robotics, process layout, material handling systems and Lean system	Upon completion of this course students should be able to; 1. Apply the basic concepts of manufacturing system, robotic in manufacturing, process analysis, process layout and material handling system. (C3, PLO2) 2. Investigate problem solving in Lean system. (C4, PLO4) 3. Demonstrate good communication skills in engineering society. (A3, PLO10)
	DJF42012 ADVANCED MANUFACTURING PROCESS (ELECTIVE)	2	**ADVANCED MANUFACTURING PROCESS** provides students with an understanding and appreciation of the width and depth of the manufacturing processes and interrelationship between manufacturing processes, product design, material properties and other aspects such as humanity, economy and environment. It will introduce advanced machining process such as electrical discharge machining, laser beam, water jet and abrasive machining.	Upon completion of this course, students should be able to: 1. Expose the various method and operation for manufacturing process by consideration of material, design and economic aspect. (C3,PLO2) 2. Select the appropriate manufacturing processes in making a plastic or composite component based on their characteristics. (C4,PLO4) 3. Demonstrate ability to work in team to complete the assigned tasks. (A3, PLO9)

Synopsis & Course Learning Outcomes (CLO)

SEMESTER	COURSE	CREDIT	SYNOPSIS	CLO
5	DJJ50193 PROJECT 2	3	**PROJECT 2** is a continuation of Project 1 focusing on project planning, development, project report and presentation. This course introduces students with ability and skills in conducting project planning, development and management based on their project design. It also provides the student with technical writing and presentation skills. The project will be implemented in a group and each group will work on a project under lecturer (s) supervision. Project titles will be based on specialization and students will be assessed individually.	Upon completion of this course students should be able to: 1. Demonstrate appropriate and creative solution in solving project problems . (P5,PLO3) 2. Perform project plan to achieve objectives with valid and reliable results. (P4, PLO4) 3. Explain the project work and defend project outcomes effectively with good communication skills. (A4, PLO10) 4. Organize project activities and outcomes in report accordance to the specified standard format that applies engineering management principles . (P4, PLO11)
	DJJ51062 MANUFACTURING CONTROL	2	**MANUFACTURING CONTROL** provides knowledge about basic principles and concept on managing an organization and major levels in manufacturing planning and control system (MPC) which will help students in making forecast, production plan, control production and manage inventory. This course also gives knowledge about production scheduling. It also includes knowledge in managing MRP system (material management), production scheduling and inventory management.	Upon completion of this course students should be able to; 1. Attain the concept and application of Manufacturing Forecasting, Production Scheduling, Inventory Control, Productivity and Capacity Planning. (C3, PLO2) 2. Integrate Material Requirement Planning (MRP) and inventory control for manufacturing process controlling activities. (C4, PLO4) 3. Adopt project management framework to develop a Material Requirement Planning (MRP) according to inventory management. (A3, PLO11)

Synopsis & Course Learning Outcomes (CLO)

SEMESTER	COURSE	CREDIT	SYNOPSIS	CLO
5	DJF51072 JIG AND FIXTURE DESIGN	2	**JIG AND FIXTURE DESIGN** covers basic production needs in industry. The topics taught includes types and functions of jigs and fixtures, supporting and locating, clamping and work holding principles, design economics, designing and constructing plate jig and plate fixtures. This course also provides knowledge in management, sustainability and manufacturing systems.	Upon completion of this course, students should be able to: 1. Apply the concepts and principles of jigs and fixtures in design. (C3, PLO2) 2. Calibrate the 3D design by using CAD/CAM software to plan and devise mini project. (P4, PLO3) 3. Demonstrate convictions towards environment and sustainability to complete assigned tasks during mini project sessions. (A3, PLO7)
	DJF51082 QUALITY CONTROL	2	**QUALITY CONTROL** provides knowledge on basic principle and concept of quality including statistical method in controlling products quality or services. This course also emphasizes on the application of Control Chart and Quality Control tools and also explains the quality improvement technique.	Upon completion of this course students should be able to; 1. Apply the relation of statistics and quality management system in understanding of quality control and their application tools. (C3, PLO1) 2. Determine the related quality tools and techniques to control the quality of products or services based on case study. (C4, PLO2) 3. Demonstrate ability to work in team to complete the assigned tasks. (A3, PLO9)

Synopsis & Course Learning Outcomes (CLO)

SEMESTER	COURSE	CREDIT	SYNOPSIS	CLO
5	DJF 51092 TOOL DESIGN	2	**TOOL DESIGN** exposes the students to the knowledge of datum concept, geometric tolerances and fundamentals to design tool based on clamping and locating principle. The topics also covers the principle of tool applications in metal and non-metal process. All the topics discussed will enable the students to plan and identify the use of tooling. They will also be exposed to the application of tooling in related industries.	Upon completion of this course, students should be able to: 1. Apply appropriately the concepts of tool design method and tooling material selection in designing tools. (C3, PLO2) 2. Perform the simulation of mold, tool and die design using CAD/CAM software. (P4, PLO3) 3. Demonstrate conviction towards environment and sustainability to complete assigned tasks during practical work sessions. (A3, PLO7)
6	DUT 600610 INDUSTRIAL TRAINING	10	**ENGINEERING INDUSTRIAL TRAINING** course will provide student with first-hand experience in an engineering-practice environment outside the polytechnic. Student will practice their knowledge and skill based on knowledge learned in polytechnic through industry supervision to acquire the craft skill and essential. Student also need to demonstrate their responsibilities and professional ethic, communication, teamwork and interpersonal and life-long learning skills at the workplace.	Upon completion of this course, students should be able to: 1. Perform the assigned task accordingly based on job scope requirement. (P4,PLO5) 2. Demonstrate responsibilities as an engineering technician while dealing with people of various background. (A5,PLO6) 3. Practice good working ethics while undergoing industrial training. (A5,PLO8) 4. Display ability to work in a team or independently base on the given task. (P4,PLO9) 5. Demonstrate oral communication skill in performing job requirement. (A3,PLO10) 6. Write a report based on given task accordingly to technical practice. (C3,PLO10) 7. Is play life long learning skill in completing the given task. (P4,PLO12)

Higher Academic Pathway

CAREER PATHWAYS FOR POLYTECHNIC STUDENTS

Graduates of polytechnics in general are able to advance their studies through these three academic career pathways;

Institution of Higher Learning (Public/Private)

This pathway allows polytechnic students to advance their studies in other public universities, as well as other private learning institutions. Apart from this, students are also able to pursue other non-technical paths, should they desire.

LIST OF POLYTECHNIC	PROGRAMME	INFORMATION
POLITEKNIK MALAYSIA UNGKU OMAR	Bachelor Of Manufacturing Engineering Technology (Supply Chain Management) with Honours	**Politeknik Ungku Omar** Jalan Raja Musa Mahadi, 31400 Ipoh, Perak Tel: +605 5457656/7622 Fax: +606 5471162 Web: http://www.puo.edu.my
POLITEKNIK MALAYSIA SULTAN AZLAN SHAH	Bachelor of Manufacturing Engineering Technology (Automotive Design) with Honours	**Politeknik Sultan Azlan Shah** Behrang Stesyen, 35950 Behrang, Perak Tel: +605 4544431/4504 Fax: +605 4544993 Web: http://www.psas.edu.my
UPM UNIVERSITI PUTRA MALAYSIA	• Bachelor of Mechanical Engineering with Honours.	**Universiti Putra Malaysia** 43400 UPM Serdang Selangor Darul Ehsan Malaysia Tel : +603 97696059/7820 Fax : +603 89426469 Web: www.upm.edu.my

Higher Academic Pathway

LIST OF UNIVERSITY	PROGRAMME	INFORMATION
	• Bachelor in Mechanical Engineering with Honours • Bachelor in Mechanical Engineering Technology (Automotive) with Honours • Bachelor in Mechanical Engineering Technology (Manufacturing) with Honours	**Universiti Tun Hussein Onn Malaysia (UTHM)** 86400 Parit Raja, Batu Pahat Johor, Malaysia Tel: +607 453 7690/375/689/685 Fax: +607 453 6085 Web: www.uthm.edu.my
	• Bachelor Of Industrial Engineering with Honours • Bachelor in Mechanical Engineering with Honours • Bachelor in Mechanical Engineering Technology with Honours • Bachelor in Electrical Engineering Technology (Industrial Automation & Robotic) with Honours • Bachelor in Manufacturing Engineering with Honours	**Universiti Teknikal Malaysia** Melaka, Hang Tuah Jaya, 76100 Durian Tunggal, Melaka. Tel: +606 2702846/1967/1964 Fax: +606 2701067 Web: www.utem.edu.my
	• Bachelor of Mechanical Engineering ((Manufacturing) Hons)	**Universiti Teknologi MARA (UiTM)** 40450 Shah Alam, Selangor Darul Ehsan, Malaysia Tel : +603 55443195/3198 Fax:+603 55438534 Web: www.uitm.edu.my

Higher Academic Pathway

LIST OF UNIVERSITY	PROGRAMME	INFORMATION
UniMAP	• Bachelor of Mechanical Engineering with Honours • Bachelor of Mechanical Engineering Technology (Honours) (Machining) • Bachelor of Mechanical Engineering Technology (Honours) (Agriculture System) • Bachelor of Mechanical Engineering Technology(Honours) (Product Development)	**Universiti Malaysia Perlis**, Exit Lebuhraya Changlun - Kuala Perlis, 02600 Arau, Perlis , Malaysia. Tel.: +604 9798706/7941/7940 Fax: +604 9798703 Web : www.unimap.edu.my
Universiti Malaysia PAHANG	• Bachelor of Industry Technology Management with Honours • Bachelor of Engineering Technology (Manufacturing) with Hons. • B.Eng (Hons.) Mechanical Engineering • B.Eng (Hons.) Manufacturing Engineering	**Universiti Malaysia Pahang** Lebuhraya Tun Razak 26300 Gambang Kuantan, Pahang , Malaysia. Tel: +609 4245268/5263/5269 Fax: +609 4245262 Web: www.ump.edu.my
UTM	• Bachelor of Mechanical Engineering with Honours	**Universiti Teknologi Malaysia,** UTM Skudai, 81310 Johor, Malaysia. Tel : +607 5537632/7573/7809 Fax : +607 5537646 Web : www.utm.my
Universiti Kebangsaan Malaysia	• Bachelor of Mechanical Engineering with Honours	**Universiti Kebangsaan Malaysia**, 43600 Bangi, Selangor. Malaysia, Tel : +603 89118173/8027/8024 Fax : +603 89118471 Web : www.ukm.my

Mathematics, Science & Computer Department

Introduction

The Mathematics, Science & Computer Department, which is also known as JMSK is an ancillary academic department. It is responsible for the B code courses in three different fields, namely Mathematics, Science and Computer. Besides, it also performs the academic supporting tasks (administration) in PMM.

This department was set up in November 2002 and is currently running with 31 lecturers, one laboratory assistant, one computer technician and one operational assistant.

JMSK is managed by the head of department and supported by three (3) heads of course of Mathematics, Science and Computer. These heads of course are responsible in monitoring staffs under their supervisions in order to ensure the learning and teaching implementations are run effectively. Besides, JMSK also managed a Pre Diploma Science programme that is supervised by a Head of Programme.

This department is equipped with computer laboratories, science laboratories, Technology Enabled Collaborative Classroom (TECC), meeting room, discussion room, prayer room and R & R corner.

Mathematics, Science & Computer Department

Mathematics, Science & Computer Department Staffs

Name: Hajjah Intanku Salwa binti Shamsuddin
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Mathematics, Science & Computer Department

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Mathematics, Science & Computer Department

Facilities

TECC

Computer Laboratory

Classroom

Science Laboratory

Discussion Room

Lecturer Meeting Room

Prayer Room

Gazebo

Synopsis & Course Learning Outcomes (CLO)

SEMESTER	COURSE	CREDIT	SYNOPSIS	CLO
1	DBM 10013 ENGINEERING MATHEMATICS 1	3	**ENGINEERING MATHEMATICS 1** exposes students to the basic algebra including resolve partial fractions. This course also covers the concept of trigonometry and the method to solve trigonometry problems by using basic identities, compound angle and double angle formulae. Students will be introduced to the theory of complex number and concept of vector and scalar. Students will explore advanced matrices involving 3x3 matrix.	Upon completion of this course, students should be able to: CLO1: Use mathematical statement to describe relationship between various physical phenomena (C3, CLS1) CLO2: Show mathematical solutions using the appropriate techniques in mathematics (C3, CLS3c) CLO3: Use mathematical expression in describing real engineering problems precisely, concisely and logically (A3, CLS3b)
1	DBM10102 ELEMENTARY MATHEMATICS	2	**ELEMENTARY MATHEMATICS** exposes students to basic algebra which focuses on expressions and fraction used in solving linear and quadratic equations. This course also covers the concept of measurement and geometry which focuses on calculating areas and properties of angles in a circle including angular problems. Students will be introduced to the basic concept of trigonometric and its functions in solving problems.	Upon completion of this course, students should be able to: CLO1 : Use mathematical statement to describe relationship between various physical phenomena (C3, CLS1) CLO2 : Show mathematical solutions using the appropriate techniques in mathematics (C3, CLS3c) CLO3: Demonstrate awareness to social needs and active learning through geometrical approaches (A3, CLS3b)

Synopsis & Course Learning Outcomes (CLO)

SEMESTER	COURSE	CREDIT	SYNOPSIS	CLO
1	DBS10012 ENGINEERING SCIENCE	2	**ENGINEERING SCIENCE** course introduces the physical concepts required in engineering disciplines. Students will learn the knowledge of fundamental physics in order to identify and solve engineering physics problems. Students will be able to perform experiments and activities to mastery physics concepts.	Upon completion of this course, students should be able to: CLO1: Use basic physics concept to solve engineering physics problems (C3, CLS1) CLO2: Apply knowledge of fundamental physics in activities to mastery physics concept (C3, CLS1) CLO3: Perform appropriate activities related to physics concept (P3, CLS3a)
2	DBM20023 ENGINEERING MATHEMATICS 2	3	**ENGINEERING MATHEMATICS 2** exposes students to the basic laws of indices and logarithms. This course introduces the basic rules of differentiation concepts to solve problems that relates maximum, minimum and calculate the rates of changes. This course discusses integration concepts in order to strengthen student's knowledge for solving area and volume bounded region problems. In addition, students will learn application of both techniques of differentiation and integration.	Upon completion of this course, students should be able to: CLO1: Use algebra and calculus knowledge to describe relationship between various physical phenomena (C3 CLS1) CLO2: Solve the mathematical problems by using appropriate and relevant fundamental calculus techniques (C3, CLS3c) CLO3: Use mathematical language to express mathematical ideas and arguments precisely, concisely and logically in calculus (A3, CLS3b)

Synopsis & Course Learning Outcomes (CLO)

SEMESTER	COURSE	CREDIT	SYNOPSIS	CLO
3	DBM30033 ENGINEERING MATHEMATICS 3	3	**ENGINEERING MATHEMATICS 3** exposes students to the statistical and probability concepts and their applications in interpreting data. The course also introduces numerical methods concept to solve simultaneous equations by using Gaussian Elimination method, LU Decomposition using Doolittle and Crout methods, polynomial problems using Simple Fixed Point Iteration and Newton-Raphson methods. In order to strengthen the students in solving engineering problems, Ordinary Differential Equation (ODE) is also included. In additional, the course also discusses optimization problems by using Linear Programming. It is designed to build students' teamwork and problems solving skill.	Upon completion of this course, students should be able to: CLO1:Demonstrate an understanding of the common body of knowledge in mathematics. (C3, CLS1) CLO2: Demonstrate problems solving skills in engineering problems. (C3, CLS3c) CLO3:Use mathematical expression in describing real engineering problems precisely, concisely and logically. (A3, CLS3b)
3	DBM30043 ELECTRICAL ENGINEERING MATHEMATICS	3	**ELECTRICAL ENGINEERING MATHEMATICS** exposes students to the statistical and probability concepts and their applications in interpreting data. The course also introduces numerical methods concept to solve simultaneous equations by using Gaussian Elimination method, LU Decomposition using Doolittle and Crout methods, polynomial problems using Simple Fixed Point Iteration methods and Newton Raphson method. In additional, the course also discuss Ordinary Differential Equation (ODE). In order to strengthen the students in solving engineering problems, Laplace Transform by using the Table of Laplace is also included. It is designed to build students' teamwork and problems solving skill.	Upon completion of this course, students should be able to: CLO1:Demonstrate an understanding of the common body of knowledge in mathematics (C3, CLS1) CLO2:Demonstrate problems solving skills in engineering problems. (C3, CLS3c) CLO3:Use mathematical expression in describing real engineering problems precisely, concisely and logically. (A3, CLS3b)

Synopsis & Course Learning Outcomes (CLO)

SEMESTER	COURSE	CREDIT	SYNOPSIS	CLO
3	DBC20012 COMPUTER APPLICATIONS	2	**COMPUTER APPLICATION** exposes students to different packages of applications software such as word processor, spreadsheet, presentation, project management, internet security and digital etiquette. This course mainly emphasize on the practical aspects of using applications software and awareness in digital world activity. Students will develop teamwork and leadership skills to present ideas and organize project. Students are able to use the information and technology skill attained in future.	Upon completion of this course, students should be able to: CLO1 : Display the ability to apply application software in office environment (P3 , CLS 4) CLO2 : Perform inquisitive mind to develop lifelong learning skills in information and technology skills (A5 , CLS 3c) CLO3 : Apply information and technology skills in office environment (C3 , CLS 3b)

General Studies Department

Introduction

The General Studies Department strives to produce excellent students in both cognitive and spiritual faculties. For that end, the department provides courses that complement the programmes offered by the main departments.

The English courses prepare the students with the essential knowledge and skills in communication to meet the challenges in their future workplace. Apart from that, students are also nurtured with the teachings of Islam, moral values and the knowledge of Islamic civilization.

This department comprises the Head of Department, together with two Heads of Course and also lecturers from the English Language Unit and the Islamic Education and Moral Studies Unit. The English Language Unit consists of 12 lecturers while the Islamic Education and Moral Studies unit has a total number of 12 lecturers. Furthermore, the department has two language laboratories and one technology enable classroom (TEC) that are equipped with the necessary peripherals to enhance the languages learning and teaching sessions.

Lastly, it is with high expectation that this Programme Handbook will enlighten the students regarding the courses offered by the General Studies, Department Politeknik Merlimau.

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Synopsis & Course Learning Outcomes (CLO)

SEMESTER	COURSE	CREDIT	SYNOPSIS	CLO
1	MPU21032 PENGHAYATAN ETIKA DAN PERADABAN	2	**PENGHAYATAN ETIKA DAN PERADABAN** ini menjelaskan tentang konsep etika daripada perspektif peradaban yang berbeza. Ia bertujuan bagi mengenal pasti sistem, tahap perkembangan, kemajuan dan kebudayaan merentas bangsa dalam mengukuhkan kesepaduan sosial. Selain itu, perbincangan dan perbahasan berkaitan isu-isu kontemporari dalam aspek ekonomi, politik, sosial, budaya dan alam sekitar daripada perspektif etika dan peradaban dapat melahirkan pelajar yang bermoral dan profesional. Penerapan amalan pendidikan berimpak tinggi (HIEPs) yang bersesuaian digunakan dalam penyampaian kursus ini.	CLO1 : membentangkan konsep etika dan peradaban dalam kepelbagaian tamadun. (A2 , CLS 5) CLO2 : menerangkan sistem, tahap perkembangan, kesepaduan sosial dan kebudayaan merentas bangsa di Malaysia. (A2 , CLS 5) CLO3 : mencadangkan sikap yang positif terhadap isu dan cabaran kontemporari dari perspektif etika dan peradaban. (A3 , CLS 4)
	DUE10012 COMMUNICATIVE ENGLISH 1	2	**COMMUNICATIVE ENGLISH 1** focuses on developing students' speaking skills to enable them to communicate effectively and confidently in group discussions and in a variety of social interactions. It is designed to provide students with appropriate reading skills to comprehend a variety of texts. The students are equipped with effective presentation skills as a preparation for academic and work purposes.	CLO1 : Participate in a discussion using effective communication and social skills to reach an amicable conclusion by accommodating differing views and opinions (A3 , CLS 3b) CLO2 : Demonstrate awareness of values and opinions embedded in texts on current issues (A3 , CLS 3b) CLO3 : Present a topic of interest that carries identifiable values coherently using effective verbal and nonverbal communication skills (A2 , CLS 4)

Synopsis & Course Learning Outcomes (CLO)

SEMESTER	COURSE	CREDIT	SYNOPSIS	CLO
2	MPU23052 SAINS, TEKNOLOGI DAN KEJURUTERAAN DALAM ISLAM*	2	**SAINS, TEKNOLOGI DAN KEJURU-TERAAN DALAM ISLAM** memberi pengetahuan tentang konsep Islam sebagai al-Din dan seterusnya membincangkan konsep sains, teknologi dan kejuruteraan dalam Islam serta impaknya, pencapaiannya dalam tamadun Islam, prinsip serta peranan syariah dan etika Islam, peranan kaedah fiqh serta aplikasinya.	CLO1: Melaksanakan dengan yakin amalan Islam dalam kehidupan seharian (A2, CLS4) CLO2: Menerangkan etika dan profesionalisme berkaitan sains teknologi dan kejuruteraan dalam Islam (A3, CLS 5) CLO3: Menghubungkait minda ingin tahu dengan prinsip syariah, etika dan kaedah fiqh dalam bidang sains, teknologi dan kejuruteraan menurut perspektif Islam (A4, CLS 4)
	MPU23042 NILAI MASYARAKAT MALAYSIA**	2	**NILAI MASYARAKAT MALAYSIA** membincangkan aspek sejarah pembentukan masyarakat, nilai-nilai agama, adat resam dan budaya masyarakat di Malaysia. Selain itu, pelajar dapat mempelajari tanggung-jawab sebagai individu dan nilai perpaduan dalam kehidupan di samping cabaran-cabaran dalam membentuk masyarakat Malaysia.	CLO1: Membincangkan sejarah dan nilai dalam pembentukan masyarakat di Malaysia (A2, CLS4) CLO2: Menerangkan etika dan profesionalisme terhadap konsep perpaduan bagi meningkatkan semangat patriotisme masyarakat Malaysia (A3, CLS5) CLO3: Menghubungkait minda ingin tahu dengan cabarancabaran dalam membentuk masyarakat Malaysia (A4, CLS4)

Synopsis & Course Learning Outcomes (CLO)

SEMESTER	COURSE	CREDIT	SYNOPSIS	CLO
2	MPU23052 SAINS, TEKNOLOGI DAN KEJURUTERAAN DALAM ISLAM*	2	**SAINS, TEKNOLOGI DAN KEJURUTERAAN DALAM ISLAM** memberi pengetahuan tentang konsep Islam sebagai al-Din dan seterusnya membincangkan konsep sains, teknologi dan kejuruteraan dalam Islam serta impaknya, pencapaiannya dalam tamadun Islam, prinsip serta peranan syariah dan etika Islam, peranan kaedah fiqh serta aplikasinya.	CLO1: Melaksanakan dengan yakin amalan Islam dalam kehidupan seharian (A2, CLS4) CLO2: Menerangkan etika dan profesionalisme berkaitan sains teknologi dan kejuruteraan dalam Islam (A3, CLS 5) CLO3: Menghubungkait minda ingin tahu dengan prinsip syariah, etika dan kaedah fiqh dalam bidang sains, teknologi dan kejuruteraan menurut perspektif Islam (A4, CLS 4)
	MPU23042 NILAI MASYARAKAT MALAYSIA**	2	**NILAI MASYARAKAT MALAYSIA** membincangkan aspek sejarah pembentukan masyarakat, nilai-nilai agama, adat resam dan budaya masyarakat di Malaysia. Selain itu, pelajar dapat mempelajari tanggungjawab sebagai individu dan nilai perpaduan dalam kehidupan di samping cabaran-cabaran dalam membentuk masyarakat Malaysia.	CLO1: Membincangkan sejarah dan nilai dalam pembentukan masyarakat di Malaysia (A2, CLS4) CLO2: Menerangkan etika dan profesionalisme terhadap konsep perpaduan bagi meningkatkan semangat patriotisme masyarakat Malaysia (A3, CLS5) CLO3: Menghubungkait minda ingin tahu dengan cabarancabaran dalam membentuk masyarakat Malaysia (A4, CLS4)

Synopsis & Course Learning Outcomes (CLO)

SEMESTER	COURSE	CREDIT	SYNOPSIS	CLO
3	DUE3022 COMMUNICATIVE ENGLISH 2	2	**COMMUNICATIVE ENGLISH 2** emphasizes the skills required at the workplace to describe products or services as well as processes or procedures. This course will also enable students to make and reply to enquiries and complaints.	CLO1: Describe a product or service effectively by highlighting its features and characteristics that appeal to a specific audience (A3, CLS3b) CLO2: Describe processes, procedures and instructions clearly by highlighting information of concern (A3, CLS4) CLO3: Demonstrate effective communication and social skills in handling enquiries and complaints amicably and professionally (A3, CLS3b)
4	DUE5032 COMMUNICATIVE ENGLISH 3	2	**COMMUNICATIVE ENGLISH 3** aims to develop the necessary skills in students to analyse and interpret graphs and charts from data collected as well as to apply the job hunting mechanics effectively in their related fields. Students will learn to gather data and present them through the use of graphs and charts. Students will also learn basics of job hunting mechanics which include using various job search strategies, making enquiries, and preparing relevant resumes and cover letters. The students will develop communication skills to introduce themselves, highlight their strengths and abilities, present ideas, express opinions and respond appropriately during job interviews.	CLO1: Present gathered data in graphs and charts effectively using appropriate language forms and functions (A2, CLS3b) CLO2: Prepare a high impact resume and a cover letter, highlighting competencies and strengths that meet employer's expectations (A4, CLS4) CLO3: Demonstrate effective communication and social skills in handling job interviews confidently (A3, CLS3b)

Synopsis & Course Learning Outcomes (CLO)

SEMESTER	COURSE	CREDIT	SYNOPSIS	CLO
3	DUE30022 COMMUNICATIVE ENGLISH 2	2	**COMMUNICATIVE ENGLISH 2** emphasises the skills required at the workplace to describe products or services as well as processes or procedures. This course will also enable students to make and reply to enquiries and complaints.	CLO1: Describe a product or service effectively by highlighting its features and characteristics that appeal to a specific audience (A3, CLS3b) CLO2: Describe processes, procedures and instructions clearly by highlighting information of concern (A3, CLS4) CLO3: Demonstrate effective communication and social skills in handling enquiries and complaints amicably and professionally (A3, CLS3b)
4	DUE50032 COMMUNICATIVE ENGLISH 3	2	**COMMUNICATIVE ENGLISH 3** aims to develop the necessary skills in students to analyse and interpret graphs and charts from data collected as well as to apply the job hunting mechanics effectively in their related fields. Students will learn to gather data and present them through the use of graphs and charts. Students will also learn basics of job hunting mechanics which include using various job search strategies, making enquiries, and preparing relevant resumes and cover letters. The students will develop communication skills to introduce themselves, highlight their strengths and abilities, present ideas, express opinions and respond appropriately during job interviews.	CLO1: Present gathered data in graphs and charts effectively using appropriate language forms and functions (A2, CLS3b) CLO2: Prepare a high impact resume and a cover letter, highlighting competencies and strengths that meet employer's expectations (A4, CLS4) CLO3: Demonstrate effective communication and social skills in handling job interviews confidently (A3, CLS3b)

Synopsis & Course Learning Outcomes (CLO)

SEMESTER	COURSE	CREDIT	SYNOPSIS	CLO
1	MPU22042 BAHASA KEANGSAAN A	2	**BAHASA KEBANGSAAN A** menawarkan kemahiran berbahasa dari aspek mendengar, bertutur, membaca dan menulis sesuai dengan tahap intelek pelajar, serta meningkatkan kecekapan berbahasa dalam konteks rasmi dan tidak rasmi.	CLO1 : Menunjukkan cara berinteraksi yang baik dalam pelbagai situasi (A3, CLS3b) CLO2: Menulis pelbagai jenis bentuk penulisan dengan jelas dan ber-sistematik (A2, CLS3b) CLO3: Menunjukkan kaedah bertutur dalam komunikasi lisan dengan sebutan dan intonasi yang betul (A3, CLS4)

Sports, Co Curriculum & Cultural Unit

Introduction

Sports, Co-curriculum and Cultural Unit (USKK) Politeknik Merlimau is responsible for the planning, management and implementation of all activities regarding sports, co curriculum and cultural events in PMM. This unit comprises of three sub-units: the sports, co-curriculum and also cultural. The activities are designed for every semester based on given schedule and academic calendar.

The sports sub-unit is responsible for planning the implementation of sports activities for PMM students. In PMM the sports sub-unit is directly involved with the Polytechnic Sports Council (MSP) in conducting sports competitions among polytechnics students in other polytechnics in Malaysia.

For the learning and teaching activities, the Co-curriculum sub-unit plays an important role in coordinating, supervising, and monitoring the co-curriculum courses. The co-curriculum sub-unit offers 2 types of courses, the MPU24011 (Sports) and MPU24651-24701 (Uniformed Unit 1) for Semester 1 and MPU24021 (Club's) and MPU24751-24801 (Uniformed Unit 2) for Semester 2 that is compulsory for every student to enrol.

The cultural and heritage sub-unit is responsible for the management and organization of the implementation of arts and cultural programmes in PMM. This sub-unit also helps students and polytechnics in handling of protocol and etiquette such as convocation ceremony.

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Sports, Co Curriculum & Cultural Unit

Facilities

Basketball Court

Takraw Court

Tennis Court

Futsal Court

Rugby Field

Football Field

Petanque Field

Volleyball Court

Sports, Co Curriculum & Cultural Unit

Music Studio

Music set

Squash Court

Table Tennis

Multi Purpose Court (Indoor)

Golf Green

Sport Centre

Multipurpose Court

Synopsis & Course Learning Outcomes (CLO)

SEMESTER	COURSE	CREDIT	SYNOPSIS	CLO
1	MPU24011 SPORT	1	**SPORT** are activities that contain recreationally useful skill training and certain rules in the pursuit of excellence for holistic mastery and skills to strengthen the formation of positive student soft skills.	Upon completion of this course, students should be able to: CLO1: demonstrate specific skills for related courses. (P2, CLS4) CLO2: demonstrate leadership and teamwork based on mastery of skills and positive practices. (A3, CLS3D)
1	MPU24651 PISPA 1	1	**PASUKAN INSTITUSI PERTAHANAN AWAM (PISPA) 1** focuses on mastering specific knowledge and skills holistically to strengthen the formation of positive soft skills of students.	Upon completion of this course, students should be able to: CLO1: demonstrate specific skills for related courses. (P2, CLS4) CLO2: demonstrate leadership and teamwork based on mastery of skills and positive practices. (A3, CLS3D)

Synopsis & Course Learning Outcomes (CLO)

SEMESTER	COURSE	CREDIT	SYNOPSIS	CLO
1	MPU24701 PANDU PUTERI 1	1	**PANDU PUTERI 1** focuses on mastering specific knowledge and skills holistically to strengthen the formation of positive soft skills of students.	Upon completion of this course, students should be able to: CLO1: demonstrate specific skills for related courses. (P2, CLS4) CLO2: demonstrate leadership and teamwork based on mastery of skills and positive practices. (A3, CLS3D)
1	MPU24611 ASKAR WATANIAH 1	1	**ASKAR WATANIAH 1** focuses on mastering specific knowledge and skills holistically to strengthen the formation of positive soft skills of students	Upon completion of this course, students should be able to: CLO1: demonstrate specific skills for related courses. (P2, CLS4) CLO2: demonstrate leadership and teamwork based on mastery of skills and positive practices. (A3, CLS3D)

Synopsis & Course Learning Outcomes (CLO)

SEMESTER	COURSE	CREDIT	SYNOPSIS	CLO
1	MPU24661 PENGAKAP KELANA 1	1	**PENGAKAP KELANA 1** focuses on mastering specific knowledge and skills holistically to strengthen the formation of positive soft skills of students.	Upon completion of this course, students should be able to: CLO1: demonstrate specific skills for related courses. (P2, CLS4) CLO2: demonstrate leadership and teamwork based on mastery of skills and positive practices. (A3, CLS3D)
1	MPU24691 RELASIS 1	1	**BRIGED RELA SISWA SISWI (RELASIS) 1** focuses on mastering specific knowledge and skills holistically to strengthen the formation of positive soft skills of students.	Upon completion of this course, students should be able to: CLO1: demonstrate specific skills for related courses. (P2, CLS4) CLO2: demonstrate leadership and teamwork based on mastery of skills and positive practices. (A3, CLS3D)

Synopsis & Course Learning Outcomes (CLO)

SEMESTER	COURSE	CREDIT	SYNOPSIS	CLO
2	MPU24021 KELAB / PERSATUAN	1	**KELAB / PERSATUAN** focuses on mastering specific knowledge and skills holistically to strengthen the formation of positive soft skills of students.	Upon completion of this course, students should be able to: CLO1: demonstrate specific skills for related courses (P2, CLS4) CLO2: demonstrate leadership and team-work based on mastery of skills and positive practices (A3, CLS3D)
2	MPU24651 PISPA 2	1	**PASUKAN INSTITUSI PERTAHANAN AWAM (PISPA) 2** focuses on mastering specific knowledge and skills holistically to strengthen the formation of positive soft skills of students	Upon completion of this course, students should be able to: CLO1: demonstrate specific skills for related courses (P2, CLS4) CLO2: demonstrate leadership and team-work based on mastery of skills and positive practices (A3, CLS3D)

Synopsis & Course Learning Outcomes (CLO)

SEMESTER	COURSE	CREDIT	SYNOPSIS	CLO
2	MPU24801 PANDU PUTERI 2	1	**PANDU PUTERI 2** focuses on mastering specific knowledge and skills holistically to strengthen the formation of positive soft skills of students.	Upon completion of this course, students should be able to: CLO1: demonstrate specific skills for related courses (P2, CLS4) CLO2: demonstrate leadership and teamwork based on mastery of skills and positive practices (A3, CLS3D)
2	MPU24711 ASKAR WATANIAH 2	1	**ASKAR WATANIAH 2** focuses on mastering specific knowledge and skills holistically to strengthen the formation of positive soft skills of students	Upon completion of this course, students should be able to: CLO1: demonstrate specific skills for related courses (P2, CLS4) CLO2: demonstrate leadership and teamwork based on mastery of skills and positive practices (A3, CLS3D)

Synopsis & Course Learning Outcomes (CLO)

SEMESTER	COURSE	CREDIT	SYNOPSIS	CLO
2	MPU24761 PENGAKAP KELANA 2	1	**PENGAKAP KELANA 2** focuses on mastering specific knowledge and skills holistically to strengthen the formation of positive soft skills of students	Upon completion of this course, students should be able to: CLO1: demonstrate specific skills for related courses (P2, CLS4) CLO2: demonstrate leadership and teamwork based on mastery of skills and positive practices (A3, CLS3D)
2	MPU24791 RELASIS 2	1	**BRIGED RELA SISWA SISWI (RELASIS) 2** focuses on mastering specific knowledge and skills holistically to strengthen the formation of positive soft skills of students.	Upon completion of this course, students should be able to: CLO1: demonstrate specific skills for related courses (P2, CLS4) CLO2: demonstrate leadership and teamwork based on mastery of skills and positive practices (A3, CLS3D)

Student Affair and Development Department

Introduction

The Student Affair and Development department is entrusted for the students' activities and governance under two main sub-officers pertaining to Recruitment & Data and Welfare & Discipline. Thus, this department deals with managing students' registration, updating students' records, managing financial support for students, and also monitoring students' discipline and welfare.

Services offered:

Recruitment & Data:

- Student registration
- Student ID card (smartcard)
- Student record and statistics
- For recruitment, please visit: http://ambilan.myplocc.edu.my

Welfare & Discipline:

- Student welfare
- Student sponsorship and financial loan
- Student vehicle pass
- Student Discipline monitoring and enforcement
- Student Representative Body (MPP)

Student Affair and Development Department

Student Affair and Development Department

Student Affair and Development Department Staffs

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Student Affair and Development Department

Facilities

Examination Unit

Introduction

The Examination Unit is responsible for coordinating and handling activities pertaining to final examination and certification. The unit is fully supported by all departments to fulfil the responsibilities given. The Examination Officer is responsible to monitor the whole examination process of polytechnic while the Examination Coordinator is to manage things regarding examination for their respective departments. Apart from that, the Examination Unit also cooperated in organising workshops related to examination such as Assessments and Vetting Workshop that is organised every semester in order to produce high quality examination questions for the Final Examination of Politeknik KPT.

The unit is led by the Head of Unit who is responsible for coordinating and facilitating the process of assessment and examination for the management. The Head of Unit is supported by two Examination Officers, in which one of them is in charge of the Records, Data and Certifications, and the other is in charge of the Management, Assessment and Bank Rate question :-

Activities carried out by the Examination Unit

- Preparing examination papers
- Conducting the final examination
- Processing the results of assessments
- Certification and Student Excellence Award
- Enforcing the assessment rules and regulations
- Administrating the Examination Unit

Examination Unit

Examination Unit

Examination Unit Staffs

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Examination Unit

Facilities

Training and Continuing Educational Unit

Introduction

Training and Continuing Education Unit (ULPL) is a unit under the office of Deputy Director of Academic Support, Politeknik Merlimau. The unit is responsible for the re-skilling and up-skilling of human capital in Politeknik Merlimau and also for private sector or other government departments / agencies.

The main activities of this unit are to:

1. Manage training or courses for staffs.
2. Manage part-time programme (*Kursus Secara Sambilan — KSS*) as to provide opportunities for those who want to pursue their diploma whilst working.
3. Implement lifelong training program. The program offers opportunities for private sector or other government departments / agencies to develop their human capital through training and education resources in polytechnic with affordable rates.
4. Manage and coordinate the use of polytechnic training facilities for private sector or other government departments / agencies.

Training and Continuing Education Unit

Training and Continuing Educational Unit

Training and Continuing Education Unit Staffs

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Training and Continuing Education Unit

Facilities

Seminar Room

Meeting Room

Tun Teja Suite

Lecture Hall

Library Unit

Introduction

The Library Unit has been established since 2002. The objectives are to:

1. Become the centre of excellence for information and referral centre
2. Support s PMM in producing semi-professional, knowledgeable workforce
3. Develop, document and maintain the information sources for the requirements of teaching and learning by:
   a. using the world standard cataloguing classification (Library of Congress Classification Outlines)
   b. using the new technology of cataloguing system (WEBOPAC) and electronic resources
   c. digitizing the documents related to learning such as examination paper, bulletin etc.
4. Provide and manage information services and conducive library facilities such as:
   a. Open shelf Collection
   b. Reference Collection
   c. Serial Collections
   d. Examination paper Collection
   e. Audiovisual Collection
5. Provide IT Corners and Wi-Fi Zone
6. Collaborate with agencies such as:
   a. Perpustakaan Negara Malaysia *(Pinjaman Berkelompok)*
   b. Interlibrary Loan
   c. UiTM Melaka Kampus Bandaraya
   d. Politeknik Melaka
   e. Kolej Vokasional Muar

Library Unit

Library Unit

Library Unit Staffs

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Library Unit

Facilities

Psychology Management Unit

Introduction

The Psychology Management Unit Politeknik Merlimau, Melaka is an academic support unit that works in character development and soft skills for both students and staffs. Currently, the unit consists of 3 Psychology Officers and is one unit under the purview of both the Head of the Student Affairs Department and the Deputy Director (Academic Support).

The goal of this unit is to help the students to progress towards academic excellence, social, personal, spiritual and career. Towards these ends, the unit will be planning, implementing, evaluating and controlling the Psychology and Counselling Services Program effectively at the Polytechnic.

What Is Counselling?

Counselling is a face to face relationship session between normal individuals to understand themselves and their situation, using potential by utilising the self, family, religion, society and religion. In addition, the individual also learn how to deal with problems in meeting with their needs today and tomorrow.

The Counselling Ethics Code is to respect client's privacy and confidentiality of information. This is done by maintaining physical and psychological well-being of clients and perform professional skills, while allowing self-determination and respecting the decision made by the client.

Psychology Management Unit

Psychology Management Unit

Psychology Management Unit Staffs

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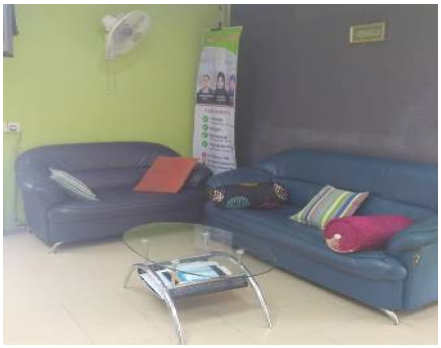
Psychology Management Unit

Facilities



Research and Innovation Unit

Introduction

The Research, Innovation and Commercial Unit (UPIK) is created by the Polytechnic Education Department, Ministry of Higher Education system to inculcate the culture of research at the polytechnic. UPIK plays an important role as a centre of coordination of research, innovation and commercialisation among academic staffs. UPIK also serves as a central collection for scientific writing reference material, material innovations and research, in which it will be presented for submission as research paper or presentation at institutional, zonal, national and international levels.

The objectives of the unit are:

1. becoming the centre of research, innovation and commercialization activities.
2. coordinating and collaborating with industries and agencies on the affairs pertaining to Research & Development (R&D), commercialization and Innovation.
3. becoming the centre of information and data management related to the students' as well as lecturers' products/projects, innovations and commercialisation at polytechnic level.
4. planning, managing and monitoring the implementation and data gathering with regards to R&D, educational research and publication.

Research and Innovation Unit

Research and Innovation Unit Staffs

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Industrial Liaison & Training Unit

Introduction

Industry Training is a major component of the learning curriculum in the polytechnic system. The diploma level students must undergo 20 weeks of internship training prior to graduation. The course covers a total of 10 credit hours inclusive of hands-on work, presentation, oral feedback session and report writing. During the training, students will have the opportunity to gain knowledge and experience on multiple discipline that includes engineering, management, account and safety procedure.

Industrial training provides an avenue for students to practice and apply both their knowledge and skills in real working environment. Thus for the internship, students should be able to achieve the following objectives;

- Perform hands-on task, usage of tools and equipment, adapt a variety of technologies, apply the knowledge gained to perform task, show development in knowledge and skills and think creatively and critically.
- Ability to acquire and understand information, carry out instruction, analyse linear and non-linear information show appropriate non-verbal communication, communicate with employees at all levels and have basic negotiation skills.
- Show positive personality traits, participate actively as a member of the team, carry out tasks in appropriate situation and build and maintain good relationship.
- Comply with the policies and rules of the organization, job procedures and safety and health regulations.
- The report is submitted on time and verified by the supervisor, work independent with minimum supervision, attendance, punctuality and solve problem by taking the right action.
- Present ideas and views and task reporting.

Industrial Liaison & Training Unit

Industrial Liaison &Training Unit

Industrial Liaison & Training Unit Staffs

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Facilities


UNIT PERHUBUNGAN DAN
LATIHAN INDUSTRI


Unit Perhubungan & Latihan Industri

Quality Assurance Unit

Introduction

Quality Assurance Unit is responsible for planning, implementing and monitoring the effectiveness of the programs related to the quality management system, in addition of being a coordinator (the coordinator) to officials in the department and the quality of the unit. This unit is under the responsibility of the Quality Manager and Deputy Director (Academic).

To further enhance the quality management system in PMM, the unit is run on two fronts of the Working Committee on Quality (JKKQ); the first one is the Quality Manager and comprises all Heads of Department and Heads of Unit, while the Quality Secretariat (UQ) is chaired by the Chief Executive Officer quality acting as the coordinator of the quality Officer and Administration Department. Both of the operators are responsible for applying the values of quality to all PMM citizens through activities that have been planned.

The objective of this unit is to coordinate and implement a quality management system to strengthen the role of PMM citizens to be more committed to the continuation of organizational excellence. In that respect, the main task of the unit is to plan, implement and monitor the effectiveness of programs related to quality management for the an excellent work culture and for the implementation of continuous improvement practices toward realising the vision, mission and quality policy of PMM. In addition, it is also responsible for coordinating the implementation of quality systems in PMM.

Quality Assurance Unit

Quality Assurance Unit

Quality Assurance Unit Staffs

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Corporate, Industrial Services & Employability Centre (CISEC) Unit

Introduction

The establishment of the Corporate Industrial Services & Employability Center (CISEC) Unit in polytechnics as an initiative towards stronger polytechnic and industrial relations. CISEC will be the one-stop center in meeting the needs of the industry Interested in working with Polytechnic especially for commercialization projects and the management of facilities or consultancy services. Through CISEC, the process of matching workforce needs in the industry with the job search of polytechnic graduates is expected to be implemented more efficiently and systematically.

The CISEC was set up in July 2010 to support one of the Polytechnic Transformation agenda that enhances the marketability of polytechnic graduates. Therefore, CISEC will be the intermediary of polytechnics and industry in coordinating career development and graduate marketing programs through joint ownership and accountability, governance, student industrial training or training needs.

Corporate, Industrial Services & Employability Centre (CISEC) Unit

Corporate, Industrial Services & Employability Centre Unit Staffs

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Kamsis Unit

Introduction

The Kamsis Unit role is to manage the placement of students. This unit is placed under the Student Affairs Department. It is headed by a Assistant Hostel Manager, Senior Supervisor, five Hostel Supervisor and thirteen Wardens (the total number of wardens should be twenty eight).

The Politeknik Merlimau Hostel has six blocks of four-storeyed buildings that can accommodate a total of 1404 students, with each building around 234 students. The capacity of each blocks for male and female student may change subject to the application for each sessions.

Facilities Provided

Kamsis provides complete facilities such as mattresses, pillows, beds, wardrobes, tables and chairs, curtains, bookshelves and so on. Other facilities include:

a) Study room;
b) Common Room is equipped with television broadcasts Njoi;
c) In-room ironing;
d) washing machine in every level;
e) Field and playground;
f) The cafeteria operates from 7.00 am to 11.00 pm;
g) Islamic Centre;
h) Internet (Wi-Fi); and
i) Hot / cold water filter machine in every block.

Application for Kamsis Registration

1) Applications can be made online via the Student Information Management System (SPMP) in PMM portal.
2) Completed forms that have been submitted online must also be printed and sent to the Kamsis Office of Management before the closing date, together with other supporting documents such as:
    i. salary slip / income verification letter that was approved by the village headman or any government officer of the Management and Professional Group;
    ii. health report that was confirmed by a physician for students who have serious health problems; and
    iii. Death Certificate for orphans.

Kamsis Unit

Selection Criteria for Students of Kamsis Politeknik Merlimau

Here are the selection criteria's for the Kamsis application:

- Salary and dependencies of parents / guardians;
- Orphans;
- Discipline;
- Activities participated in Kamsis / Department;
- Distance home to the Polytechnic;
- Health problems;
- Form complete and the information is correct; and
- On availability

Kamsis Unit


KEMENTERIAN PENDIDIKAN TINGGI
POLITEKNIK
ORGANISATIONAL CHART
KAMSIS UNIT
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KETUA JABATAN HAL EHWAL PELAJAR (DH44)
M. Hamdi Bin Khoiran
KETUA WARDEN
Muhammad Fairuz Bin Baharuddin Pallen
KETUA UNIT PENGURUSAN KAMSIS (N32)
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PENYELIA ASRAMA N32 (TEMK)
Sandra Maria Binti Sulio
PENYELIA ASRAMA (N16)
Rozayanti Irma Binti Zainal
PENYELIA ASRAMA (N16)
TARIKH KEMASKINI : 04.08.2023

Kamsis Unit

Kamsis Unit Staffs

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Facilities


UNIT PENGURUSAN KAMSIS
POLITEKNIK MERLIMAU MELAKA


UNIT PENGURUSAN KAMSIS
POLITEKNIK MERLIMAU


V5
V6

Entrepreneurial Unit

Introduction

The Entrepreneurial Unit supports students, alumni, small business and researchers to promote the creation of new businesses for industrial, technological, and social services.

The unit aims to promote the created businesses to be innovative, technology-based, with capacity to grow and committed in creating high-quality jobs in the region. It also promotes self-employment of young graduates and educates them in starting a new business with proper management.

The Entrepreneurship Unit of Politeknik Merlimau is located at Ground Floor of Commerce Department and is open to public on working office hours from 8.30 am to: 5.30 pm. The main objectives of the Entrepreneurial Unit are:

- Cultivating entrepreneurial attitudes and skills among students from any field of education;
- Organising entrepreneurship activities among students accordingly;
- Coordinating the creation of start-up business among students
- Providing entrepreneurship facilities for students;
- Building networking with industries and agencies for student's business matching
- Involving professionals, entrepreneurs and agencies in the transmission of the entrepreneurial experience and as sponsors of activities that take place.

Entrepreneurial Unit

Entrepreneurial Unit Staff

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Facilities

Editorial Board